

LEVITSKAYA, S.V.; IGNATOVA, M.S.; PREOBRAZHenskAYA, K.N.; YERMOLIN, V.N.;
KLEMBOVSKIY, A.I.; RAYKHLIN, N.T.

Essential epitheliopathy with the megaloblastic anemia syndrome
(congenital ectomesodermal dysplasia). Probl. gemat. i perel.
krovi no.10:12-19 '63 (MIRA 18:1)

1. Iz kafedry pediatrii (zav. - prof. R.L. Gamburg) Tsentral'nogo
instituta usovershenstvovaniya vrachey, bol'nitsy imeni F.E.
Dzerzhinskogo (glavnyy vrach A.N. Kudryashova), patomorfologi-
cheskikh otdelov Instituta terapii i Instituta eksperimental'noy
i klinicheskoy onkologii AMN SSSR.

PREOBRAZHENSKAYA, M.Ye.; KUZNETSOVA, V.M.

Biological activity of some polyglycosides. Dokl. AN SSSR 163 no.3:
771-773 J1 '65. (MIRA 18:7)

1. Institut biologicheskoy i meditsinskoy khimii AMN SSSR. Submitted
October 12, 1965.

1-3

Catalytic oxidation of organic compounds by carbon dioxide. I. Oxidation of benzyl alcohol in presence of oxide and salt catalysts. A. M. RUBINSTEIN, K. P. PASURNANSKAYA, and I. S. TCHERNOMORSKAYA. II. Oxidation of different alcohols. A. M. RUBINSTEIN and N. F. LUKASCHINA. III. Mechanism of oxidation of alcohols. A. M. RUBINSTEIN and N. M. NAGIEV (Sci. Rep. Moscow State Univ., 1938, No. 6, 287-297, 299-306, 307-319).—I. The yields of $\text{CH}_3\text{Pr}^2\text{CHO}$ (I) and $\text{CH}_3\text{Pr}^2\text{CO}_2\text{H}$ (II) obtained under optimum conditions by passing $\text{iso-C}_6\text{H}_{11}\text{OH}$ (III) in a stream of CO_2 over a no. of catalysts are: U_2O_5 at 450° , 72.9 and 12.3, MoO_3 -pumice at 450° , 59.3, and 18.2, $\text{Ca}(\text{VO}_3)_2$ (IV) at 600° , 58.6 and 3.7, $\text{Sn}(\text{VO}_3)_2$ at 450° , 56 and 30.4, and MoO_3 - V_2O_5 -pumice at 400° , 40.8 and 37.9%. Except in the case of (IV) the optimum temp. are the same as for oxidation by air in presence of the same catalysts. The optimum rates of flow of CO_2 are determined for each catalyst.

II. (III)- CO_2 mixtures yield chiefly CH_3CHPr^2 (V) in presence of V_2O_5 at 550° , and $\text{Ba}^2\text{OH}-\text{CO}_2$ mixtures give chiefly CH_3CMe_2 with MoO_3 at $350-500^\circ$. $\text{CH}_3\text{Ph-OH}$ and CO_2 afford PhCHO 54% and BaOH 32.5% with MoO_3 at 400° .

III. The gaseous products obtained by passing (III), (III)- H_2O , (III)- CO_2 , or (III)- CO_2 - H_2O mixtures over MoO_3 -asbestos at $350-500^\circ$ contain chiefly H_2 , together with (V), CO , and CO_2 , the yield of (V) being greatest, and of H_2 least, when (III) alone is passed over the catalyst. The ratio (I)/(II) in the liquid product falls with increasing temp. Under the conditions of the experiment, HCO_2H (VI) yields CO and H_2 . The reaction of oxidation of alcohols by CO_2 is represented: $\text{CH}_3\text{R-OH} + \text{CO}_2 \rightarrow \text{R-CHO} + (\text{VI})$; $(\text{VI}) \rightarrow \text{CO} + \text{H}_2$; $\text{R-CHO} + \text{H}_2\text{O} \rightarrow \text{CHR(OH)}_2 \rightarrow \text{R-CO}_2\text{H} + \text{H}_2$; $\text{CHR(OH)}_2 + \text{CO}_2 \rightarrow \text{R-CO}_2\text{H} + (\text{VI})$. R. T.

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

13041 57103114

COMMON ELEMENTS		1ST AND 2ND CROSS		3RD AND 4TH CROSS	
<p>CA</p> <p>Anesthetic compounds in the naphthalene series. II. Esters of 4-monoalkylamino-1-naphthoic acids. S. I. Sergievskaya and K. P. Preobrazhenskaya. <i>J. Gen. Chem.</i> (U. S. S. R.) 10, 950-8(1940); cf. C. A. 33, 1307². 4,1-$H_2NC_6H_4CO_2H$ (I), m. 170°, was prepd. from 4,1-$O_2NC_6H_4CO_2H$ (II) on hydrogenation in alc. in the presence of a Ni or Pt catalyst or from its Et ester by sapon. with KOH. Et ester of I, m. 80°, from the Et ester of II on hydrogenation in alc. in the presence of a Ni catalyst or from I on esterification; $Et_2NC_6H_4CO_2H$ (III), from the corresponding ester of II on hydrogenation in alc. in the presence of Ni (HCl salt, m. 212°). $Et_2HNC_6H_4CO_2H$ (IV), m. 153° (decompn.), was prepd. from I by heating with HCl and aq. KOH. Et ester, m. 70-7° (HCl salt, m. 145-6°), Pr ester, m. 69° (HCl salt, m. 143-5°), $Et_2NC_6H_4CO_2H$ ester, from III on heating with EtBr in alc. (HBr salt, m. 188-9°). The following monoalkyl derivs. were prepd. in an analogous manner as IV: $Pr_2HNC_6H_4CO_2H$, m. 172-3°; Et ester, m. 38-9°; Et ester-HCl, m. 156°; $Et_2NC_6H_4CO_2H$ ester-HBr, m. 182-3°; $Pr_2HNC_6H_4CO_2H$, m. 208°; Et ester, m. 54°; Et ester-HCl, m. 143-4°; Pr ester, m. 50.5°; Pr ester-HCl, m. 114-16°; $Et_2NC_6H_4CO_2H$ ester-HBr (butylnaphthocaine, V), m. 171-2° (decompn.). $CH_3CH_2CH_2HNC_6H_4CO_2H$, m. 151°; Et ester, m. 67.5-8°; Et ester-HCl, m. 147-8° (decompn.); Pr ester, m. 61-2°; $Et_2NC_6H_4CO_2H$ ester-HBr, m. 191-5°. The $Et_2NC_6H_4CO_2H$ ester of 1,4-Me-$CHNHC_6H_4CO_2H$ was prepd. from III by heating with iso-PrBr and iso-PrOH (HBr salt, m. 185-8°), and the $Et_2NC_6H_4CO_2H$ ester of 1,4-Me-$CHCH_2NHC_6H_4CO_2H$ from III by heating with iso-BuBr and iso-BuOH (HBr salt, m. 180°). Pharmacol.</p>		<p>studies showed that the anesthetizing property of III was increased by introducing an alkyl group into the aromatic amino group. V showed the strongest anesthetic action, the latter being higher than that of pentoxaine (VI). V was less toxic than VI and caused no hyperemia. III. Esters of thiol-1-naphthoic acid and 4-aminothiol-1-naphthoic acid. S. I. Sergievskaya and A. A. Kropacheva. <i>Ibid.</i> 1737-50. Into a soln. of 0.80 g. KOH in 108 ml. EtOH and 64 ml. H₂O, H₂S was introduced at -5° until an increase in wt. of 6.5 g. was observed whereupon a soln. of 15 g. 4,1-$O_2NC_6H_4COCl$ in 100 ml. abs. benzene was added at -5 to -2° while stirring. The resulting 4-aminothiol-1-naphthoic acid, $O_2NC_6H_4COSH$ (I), m. 86.5-7.5°, was easily oxidized to $(O_2NC_6H_4CO)_2$, m. 184-5°, in the presence of air or by means of $FeCl_3$, I_2, or $K_2Cr_2O_7$ in alc. The Me ester (II) of I, m. 112°, was obtained from the K salt on treatment with MeI in EtOH. Et ester, m. 32-3°; Pr ester, m. 39-9.5°; $ClCH_2$ ester (III), m. 55-6°; $(O_2NC_6H_4CO)_2SCH_3$, m. 195-6°, from I on heating with $ClCH_2CH_2Br$ in alc. KOH; $Et_2NC_6H_4CO_2H$ ester, from III on heating with EtNH and NaI (HCl salt (IV), m. 139-9.5°); $Et_2N(CH_2)_2$ ester-HCl, m. 159-6° (separate, m. 114-15°); $Et_2N(CH_2)_2$ ester-<i>para</i>-tol., m. 108-9°; $Et_2N(CH_2)_2$ CH_2CH_2Me ester-HCl, m. 148-9°. II in alc. on heating with iron shavings and concd. HCl yielded the Me ester (V), m. 101°, of 4-aminothiol-1-naphthoic acid, $H_2NC_6H_4COSH$ (VI); Ac deriv. of V, m. 191-1.5°. The following esters of VI were prepd. in an analogous manner: Et ester, m. 70-1° (Ac deriv., m. 189°); Pr ester, m. 55.5-6°; $Et_2NC_6H_4CO_2H$ ester-HCl, m. 181-4°; $Et_2NC_6H_4CO_2H$ ester-2HCl, m.</p>			

ASB-31A METALLURGICAL LITERATURE CLASSIFICATION

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151° (decompn.), solidifies, m. 183-4° (decompn.); $\text{Et}_3\text{N}(\text{CH}_2)_6$, ester- $\text{Et}_3\text{N}(\text{CH}_2)_6$ ester-HCl, m. 140-0.5°; $\text{Et}_3\text{NCH}_2\text{CH}_2\text{CHMe}$ ester-HCl, m. 162°. HCl, m. 167.5-8.5°; $\text{Et}_3\text{NCH}_2\text{C}_6\text{H}_5\text{COSH}$, m. 162°. 163-4°, ClC_6H_4 ester of K salt of I with $\text{Et}_3\text{NC}_6\text{H}_4\text{CH}_2\text{COCl}$ by alc. Condensation of the K salt of I with $\text{Et}_3\text{NC}_6\text{H}_4\text{CH}_2\text{COCl}$ in acetic acid in the heat yielded ($\text{Et}_3\text{NCH}_2\text{CH}_2\text{SCH}_2\text{S}$) 2HBr, m. 222-2.5°. A thiol-I from a compd., m. 55-7° (Ei nitronaphthalene I), prep'd like I from 1-naphthoic acid, $\text{CaI}_2\cdot\text{COSH}$ (VII), prep'd like 1 from $(\text{C}_6\text{H}_5)\text{COSH}$, m. naphthoic acid, $\text{CaI}_2\cdot\text{COSH}$ was oxidized to $(\text{C}_6\text{H}_5)\text{COSH}$, m. 178-9°; ClC_6H_4 ester, $\text{CaI}_2\cdot\text{COCl}$ and KSH, ester, b.p. 178-9°; ClC_6H_4 ester, m. 103-4°, by air or FeCl₃. Ester ester-HCl, m. 152.5-3° (picrate, m. 180-90°); Et_3NCH_2 ester-HCl, m. 152.5-3° (picrate, m. 110-10.5°); $\text{Et}_3\text{N}(\text{CH}_2)_6$ ester-HCl, m. 120-1°. A phar-macological study of the dialkylaminoalkyl esters of VI and VII, respectively, revealed a great anesthetic power. The latter, however, showed too great an irritating action to be recommended for practical purposes. When used in the esters of VI, caused no irritation. When used in a concn. 1:1000 anesthesia was induced within 1-2 min. and lasted 2½-50 min. Untoward effects were not observed.

Gertrude Berend

1ST AND 2ND DEPT.										3RD AND 4TH DEPT.									
PROCESSES AND PROPERTIES INDEX																			
<div style="float: left; width: 10%;">ca</div> <div style="float: right; width: 10%;">10</div> <div style="clear: both;"></div> <p>Synthesis of derivatives of 4-amino-3,6,7,8-tetrahydro-1-naphthalenecarboxylic acid by catalytic means. Analog of naphthocaine in the tetrahydronaphthalene series. S. I. Sergiyevskaya and K. P. Preobrazhenskaya. <i>J. Gen. Chem.</i> (U. S. S. R.) 13: 723-6 (1943) (English summary). 4,1-AcNHCl₂CO₂Et (0.5 g.) in 15 cc. EtOH, with a Pt catalyst from 0.19 g. Pt oxide, was hydrogenated at 180-5° at 35-40 atm. H₂ to yield <i>Et 4-acetamidotetralin-1-carboxylate</i>, m. 165-6°; the same compd. resulted on hydrogenation with Raney catalyst. Hydrolysis by alc. HCl gave the <i>Et 4-aminotetralin-1-carboxylate</i> (I), m. 90°. Similar hydrogenation of <i>Et 4-amino-1-naphthoate</i> at 170-80° gives I, m. 90°, which, treated with Ac₂O, gave the Ac deriv., m. 165-6°. <i>Et 4-nitro-1-naphthoate</i> (in EtOH) can be similarly hydrogenated to give I, m. 90°, under the above conditions. I (3.3 g.) was treated with 10 g. Et₃NH₂Cl₂OH and NaOEt (from 0.2 g. Na), and heated under reflux for 6-7 hrs. to yield, after distn. of EtOH and excess reagents, an oil, which was treated with water, extd. with Et₂O, the latter evapd. and treated with Et₂O soln. of HCl; the resulting cryst. ppt. was <i>2-diethylaminoethyl 4-aminotetralin-1-carboxylate-HCl</i>, m. 187-8° (from EtOH) ("tetracaine"); citrate, m. 85-6°. The product has strong anesthetic properties superior to cocaine and naphthocaine. G. M. Kosolapoff</p>																			
<div style="float: left; width: 80%;"> <p>ALL-Union Sci.-Res. Chemical-Pharmaceutical Inst. in Ordzhonikidze</p> </div> <div style="float: right; width: 10%;"> <p>8-12</p> </div> <div style="clear: both;"></div>																			
<div style="float: left; width: 40%;"> <p>ASB 58-5LA METALLURGICAL LITERATURE CLASSIFICATION</p> </div> <div style="float: right; width: 60%;"> <p>FROM BOMIRV</p> </div> <div style="clear: both;"></div>																			
<p>FROM SYMBIRSK</p>										<p>CELLULOSE</p>									
<p>FROM 20</p>										<p>FROM 20</p>									

PREOBRAZHENSKAYA, K. P.

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Check Synthesis of 2-alkyl-3-phenyl-3-(alkylamino)propionic
acids and some of their derivatives. V. M. Reznikov and
K. P. Preobrazhenskaya, J. Gen. Chem. U.S.S.R. 24,
1950 17 (1954) (Engl. translation).—See C.A. 49, 14681b.
B. M. R.

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M. A. YOCATZ
scopies

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PREOBRAZHENSKAYA, K.P.

USSR

Synthesis of 2-alkyl-3-phenyl-3-(alkylamino)propionic acids and some of their derivatives. V. M. Rodionov and K. P. Preobrazhenskaya (D. I. Mendeleev Chem.-Technol. Inst., Moscow). *Obshch. Khim.* 24, 1971-80 (1954). The synthesis of β -amino carboxylic acids from aldehydes, NH_3 , and $\text{CH}_3\text{CO}_2\text{H}$ proceeds probably through the formation of RCH_2NH or $\text{RCH}(\text{OH})\text{NH}$ intermediates. A further proof of this step is afforded by the syntheses described below (cf. Rodionov and Fedorova, *C.A.* 21, 1978). Heating 7.00 g. PhCH_2NMe and 7.55 g. $\text{EtCH}(\text{CO}_2\text{H})$ in 40 ml. dry C_2H_5 , 2 hrs. at $55-60^\circ$, 2 hrs. at $60-70^\circ$, and 6 hrs. at $80-85^\circ$, concg. the mixt., and adding dry Et_2O gave 45% crude product, which yielded 22% $\text{HO}_2\text{CCH}_2\text{CHPhNHMe}$, m. $205-6^\circ$ (from EtOH). The mother liquor on evapn. and addn. of Et_2O gave 1.11 g. isomeric form, m. 170° , mixed m.p. with the above isomer, m. $150-60^\circ$. The mother liquor gave on evapn. 30% $\text{m. } 150-60^\circ$. A similar reaction with $\text{Bu-PhCH}_2\text{CH}_2\text{CO}_2\text{H}$, m. 104° . A similar reaction with $\text{Bu-CH}(\text{CO}_2\text{H})$ gave 27% $\text{HO}_2\text{CCH}_2\text{BuCHPhNHMe}$, m. $183-4^\circ$ (from EtOH), about 9% diastereoisomer, m. 205° (mixed m.p. with its isomer, $172-4^\circ$), and 25% $\text{PhCH}_2\text{CBuCO}_2\text{H}$, m. 83° . $\text{PhCH}_2\text{CH}(\text{CO}_2\text{H})$ gave 64.2% crude product, yielding 30.3% $\text{HO}_2\text{CCH}(\text{CH}_2\text{Ph})\text{CHPhNHMe}$, m. $218-19^\circ$, 20.4% diastereoisomer, m. $183-9^\circ$ (mixed m.p. with its isomer, $180-2^\circ$), and 20.8% $\text{PhCH}_2\text{C}(\text{CH}_2\text{Ph})\text{CO}_2\text{H}$, m. $150-7^\circ$; 56.4% yield of the crude amino acid, m. $189-92^\circ$ or 28% pure product, m. $218-19^\circ$, was obtained also by heating 0.28 g. BuH , 9.7 g. $\text{PhCH}_2\text{CH}(\text{CO}_2\text{H})$, and 7.5 g. KOAc in 25 ml. AcOH 1 hr. at $70-80^\circ$ and 10 hrs. at 100° . Heating 10.3 g. PhCH_2NH_2 , 10.40 g. BuH , 10.09 g. $\text{CH}_3\text{CO}_2\text{H}$, and 55 ml. C_2H_5 3 hrs. at $60-70^\circ$ gave a ppt. and CO_2 .

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the ppt. fr. 100% with 15 ml. C_6H_6 and added 8 hrs. at 50° yielded, on addn. of H_2O to the condensed mixture, 5% crude or 38.5% pure $HO_2CCH_2CHPhNM_2CONH_2$ (I) (1.12 g.) (from $MeCO_2H$), while the mother liquor gave 183-4° (from $MeCO_2H$). Heating 3.53 g. $PhCH_2NH_2$, 3.5 g. $CH_3CH_2CHCO_2H$. Heating 3.53 g. $PhCH_2NH_2$, 3.5 g. $CH_3CH_2CHCO_2H$, and 3.45 g. $CH_3(CO_2H)$ in C_6H_6 2.5 hrs. at 60° finally to 70° in a distn. app. gave 6 g. flocculent ppt. which, dried and crystd. from $EtOH$, yielded 31% pure product, $C_6H_5O_2N$, m. 128-40°, apparently an intermediate product of the reaction. $HO_2CCH_2CHPhNM_2CONH_2$ (I) (1.12 g.) in 10 ml. 10% KOH treated over 20 min. with 0.5 ml. EtO_2CCl at 0°, and the mixt. kept 1 hr. at 0° and 1 hr. at room temp., then acidified, yielded 61% $HO_2CCH_2CHPhNM_2CO_2Et$, m. 77-8° (from EtO_2 -petr. ether). Similarly was prepd. 89% $HO_2CCH_2CHPhNM_2CO_2Et$, m. 117-18°, and 87% $HO_2CCH_2CHPhNM_2CO_2Et$, m. 130.5-41° (from dil. $EtOH$). I (1.37 g.) and 0.7 g. KCN in 7.5 ml. H_2O heated 2.5 hrs. at 100°, filtered, cooled, and acidified to Congo red yielded 66.5% $HO_2CCH_2CHPhNM_2CONH_2$ (II), m. 165-7° (cf. Evans and Johnson, C.A. 25, 516). Similarly were obtained 53.9% pure $HO_2CCH_2CHPhNM_2CONH_2$, m. 202°, and 74% $HO_2CCH_2CHPhNM_2CONH_2$, m. 213-14° (from $EtOH$). II (0.5 g.) refluxed with 10 ml. 12% HCl 2 hrs. gave on filtration and cooling 83% 3-methyl-6-phenylhydroureil, m. 104-5° (Johnson, loc. cit., gave m. 153-9.5°). Similarly the other ureido acids yielded: 90% 3-methyl-6-phenyl-5-ethylhydroureil, m. 137-8° (from $EtOH$), and 83% 5-Bu hydroureil, m. 107.5-0° (from $EtOH$). G. M. Kosolapoff

PREOBRAZHENSKAYA, L.A.

Relation between the magnitude of conditioned reflexes and the
use of conditioned stimuli in a stereotype with homogeneous and
heterogeneous reinforcement. Trudy Inst.vys.nerv.deiat. Ser.
fiziol. 7:216-222 '62. (MIRA 16:2)
(CONDITIONED RESPONSE)

PREOBRAZHENSKAYA, L.A.

Comparison of typological characteristics of dogs on the basis of conditioned food-secretion and defense motor reflexes. Trudy Inst. vys. nerv. deiat. Ser. fiziol. 3:173-195 '59. (MIRA 12:3)

1. Iz laboratorii vegetativnykh uslovnykh reflektsov, zav. - A.A. Pavlovskaya.

(CONDITIONED RESPONSE) (TEMPERAMENT)

PREOBRAZHENSKAYA L.A.

USSR/Human and Animal Physiology. The Nervous System.

V

Abs Jour: Ref. Zhur-Biol., No 6, 1958, 27443.

Author : L.A. Preobrazhenskaya
Inst : The Institute of Higher Nervous Activity of the
Academy of Sciences of the USSR
Title : Changes in the Functional State of the Cerebral
Cortex and the Blood Pressure Level in Dogs With
Nervous Systems of the Strong Type

Orig Pub: Tr. In-ta vyssh. nervn. deyat-sti AN SSSR. Ser.
fiziol., 1956, 2, 237-253.

Abstract: Over-stressing the nervous processes of 3 dogs
of the strong type led to temporary changes in
higher nervous activity and a temporary increase in
blood pressure of up to 30 mm Hg. This hypertension
appeared during stimulation and after testing;

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USSR/Human and Animal Physiology. The Nervous System.

V

Abs Jour: Ref. Zhur-Biol., No 6, 1958, 27443.

in cases in which there were more pronounced changes in higher nervous activity (phase phenomena, cycling), it also appeared before testing. Over-stressing the inhibitory process led to a fall in blood pressure. The changes in blood pressure disappeared along with normalization of higher nervous activity, which was directly dependent upon the extent of disturbance in this area, such disturbances appearing to a substantial extent only in representatives of the weaker variations of the strong type.

Card : 2/2

PREOBRAZHENSKAYA, L.A.

Interaction of the conditioned food and defensive reflexes.
Report No. 1: Interaction of the conditioned food and defensive
conditioned reflexes in the simultaneous use of conditioned
food and defensive stimuli. Trudy Inst. vys. nerv. deiat. Ser.
fiziol. 5:103-119 '60. (MIRA 13:10)

1. Iz Laboratorii vysshey nervnoy deyatel'nosti zhivotnykh
(zav. - A.A. Pavlovskaya) instituta vysshey nervnoy deyatel'nosti.
(CONDITIONED RESPONSE)

PREOBRAZHenskAYA, L.A.

Interaction of the conditioned food and defensive reflexes.
Report No. 2: Interaction of the conditioned food and defensive
reflexes following the successive use of heterogeneous conditioned
stimuli. Trudy Inst. vys. nerv. deiat. Ser. fiziol. 5:120-133
'60. (MIRA 13:10)

1. Iz Laboratorii vysshey nervnoy deyatel'nosti zhivotnykh
(zav. - A.A. Pavlovskaya) instituta vysshey nervnoy deyatel'-
nosti.

(CONDITIONED RESPONSE)

PREOBRAZHENSKAYA, L.A.

Changes in the functional state of the cerebral cortex and the blood pressure level in dogs with a strong type of nervous system. Trudy Inst.vys.nerv.deiat. Ser.fiziol. 2:237-253 '56. (MIRA 10:1)

1. Iz laboratorii vegetativnykh uslovykh refleksov, izpolnyayushchaya obyazannosti zav. - A.A.Pavlovskaya.
(BLOOD PRESSURE) (CONDITIONED RESPONSE)
(TEMPERAMENT)

PREOBRAZHENSKAYA, L.A.

Interaction of conditioned food and defense reflexes. Report No.3.
Trudy Inst. vys. nerv. deiat. Ser. fiziol. 6:132-140 '61.

(MIRA 14:12)

1. Iz laboratorii vysshey nervnoy deyatel'nosti zhivotnykh - zav. -
A.A.Pavlovskaya.

(CONDITIONED RESPONSE)

Distr: 4E43/4E347

Formation of peruronic acid in solution. A. M. Gurevich, L. D. ~~Prigodnyy~~ ~~Prigodnyy~~, and E. V. Komarov. ~~Zhur. Neorg. Khim.~~ ~~2, 2257-15(1967)~~. On the basis of potentiometric and spectrophotometric titrations with alc. NaOH and the analysis of the ppt., it was established that uranyl nitrate reacts with H_2O_2 to form peruronic acid (I) according to the equation: $2UO_2(NO_3)_2 + 2H_2O_2 + H_2O \rightleftharpoons H_4U_2O_8 + 4HNO_3$. The spectrophotometric curve consisted of 3 peaks owing to the formation of I at pH from 4 to 6, from pH 7 to 9, and >11.5 corresponding, resp., to 2 deriva. of I: $NaHU_2O_8$ and $Na_2U_2O_8$. The disocn. consts. of I are $K_1 \sim 10^{-7}$ and $K_2 \sim 10^{-9}$; the equil. const. of formation $K_{eq} = 2.1 \times 10^{-4}$. A. F. Kotlyar.

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PM

GUREVICH, A.M.; PRILOBRAZHENSKAYA, L.D.; OSICHEVA, N.P.

Study of the mechanism of electrolytic isolation of uranium
from alkaline solutions of peroxyuranates. *Trudy Radiofiz. inst.*
AN SSSR. 8:58-76 '58. (MIRA 12:2)
(Uranium--Electrometallurgy)

RATNER, A.P. [deceased]; GUREVICH, A.M.; PREOBRAZHENSKAYA, L.D.; OSICHEVA, N.P.

Investigation of the processes of thermal decomposition and
hydrolysis of the salt $\text{Na}_4\text{UO}_8 \cdot 9\text{H}_2\text{O}$ in alkaline and aqueous
solutions at 80 - 99°C. Trudy Radiev.inst.AN SSSR. 8:99-109
'58. (MIRA 12:2)

(Sodium peroxyuranate) (Hydrolysis) (Dissociation)

RATNER, A.P. [deceased]; GUREVICH, A.M.; PREOBRAZHENSKAYA, L.D.; SIMONOV, N.F.

Investigation of the hydrolysis of Na_4UO_8 . Trudy Radiev.inst.
AN SSSR. 8:110-116 '58. (MIRA 12:2)

(Sodium peroxyuranate) (Hydrolysis)

AUTHORS: Gurevich, A. M., Practrzhenskaya, L. D. SOV/78-3-1-15/23

TITLE: The Investigation of the Hydrolysis and Decomposition of the Salt $\text{Na}_4\text{UO}_8 \cdot 9\text{H}_2\text{O}$ in Diluted Solution (Issledovaniye gidroliza i razlozheniya soli $\text{Na}_4\text{UO}_8 \cdot 9\text{H}_2\text{O}$ v razbavlennykh rastvorakh)

PERIODICAL: Zhurnal neorganicheskoy khimii, 1958, Vol 3, Nr 11, pp 2512-2522 (USSR)

ABSTRACT: In the present paper new data were given on the hydrolysis of $\text{Na}_4\text{UO}_8 \cdot 9\text{H}_2\text{O}$. The existence of some hydrolysis products was found in the decomposition. The hydrolysis was carried out by means of physical-chemical methods in diluted solutions of $\text{Na}_4\text{UO}_8 \cdot 9\text{H}_2\text{O}$ in the range of pH 4-14. A uranium concentration of $1 \cdot 10^{-3}$ mol was used. The following compounds are produced by the hydrolysis: Na_4UO_8 , Na_3HUO_8 , Na_2UO_6 , $\text{Na}_2\text{U}_2\text{O}_9$, NaHU_2O_9 , $\text{H}_2\text{U}_2\text{O}_9$ and $\text{Na}_2\text{U}_2\text{O}_7$.

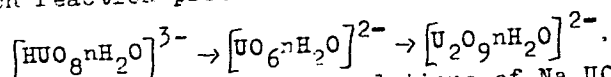
The complete reversible reaction takes place in aqueous solutions of Na_4UO_8 with a uranium concentration of $1 \cdot 10^{-3}$ mol: $\text{UO}_8^{4-} + \text{H}_2\text{O} \rightleftharpoons \text{HUO}_8^{3-} + \text{OH}^-$.

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SOV/78-3-11-15/23

The Investigation of the Hydrolysis and Decomposition of the Salt
 $\text{Na}_4\text{UO}_8 \cdot 9\text{H}_2\text{O}$ in Diluted Solution

On the strength of the spectrometric and potentiometric investigations the value of the dissociation constant of H_4UO_8 and the dissociation constant of the first stage of the hydrolysis of the anion $[\text{UO}_8\text{nH}_2\text{O}]^{4-}$ were calculated. $K \approx 5 \cdot 10^{-13}$ for H_4UO_8 , for $[\text{UO}_8\text{nH}_2\text{O}]^{4-}$ $K \approx 2 \cdot 10^{-2}$. It was shown that the hydrolysis of the anion $[\text{HVO}_8\text{H}_2\text{O}]^{3-}$ takes place immediately in the case of an action of the hydrogen ions and that the decomposition reaction proceeds according to the following scheme:



In the titration of the diluted solutions of $\text{Na}_4\text{UO}_8 \cdot 9\text{H}_2\text{O}$ and in the pH-intervals 9-6 the same compounds are produced as in the titration of $\text{H}_2\text{U}_2\text{O}_9$ with sodium hydroxide.

On the strength of the obtained results the dissociation constants for the first and second stage of the hydrolysis of

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SOV/78-3-11-15/23
The Investigation of the Hydrolysis and Decomposition of the Salt
 $\text{Na}_4\text{UO}_8 \cdot 9\text{H}_2\text{O}$ in Diluted Solution

the salt $\text{Na}_2\text{U}_2\text{O}_9$ may be calculated:

$$K_{\text{hydrolysis}}^1 = 10^{-4}$$

$$K_{\text{hydrolysis}}^2 = 10^{-7}$$

It was shown that at a pH-value of 14,0 of the solution and at room temperature the solutions of $\text{Na}_4\text{UO}_8 \cdot 9\text{H}_2\text{O}$ obey the Beer's law. Furthermore it was shown that the uranates which were produced at a higher pH-value than 14 are in the case of the action of uranium nitrate on sodium hydroxide solution identical to uranates produced in the decomposition of the salt $\text{Na}_4\text{UO}_8 \cdot 9\text{H}_2\text{O}$.

There are 8 figures, 5 tables, and 12 references, 8 of which are Soviet.

SUBMITTED: July 17, 1957
Card 3/4

5(2)
 AUTHORS: Komarov, Ye. V., Preobrazhenskaya, L. D., Gurevich, A. M. SOV/78-4-7-36/44

TITLE: On Compounds Forming in the System $\text{UO}_2(\text{NO}_3)_2 - \text{K}_2\text{CO}_3 - \text{H}_2\text{O}_2 - \text{H}_2\text{O}$ (O soyedineniyakh obrazuyushchikhsya v sisteme $\text{UO}_2(\text{NO}_3)_2 - \text{K}_2\text{CO}_3 - \text{H}_2\text{O}_2 - \text{H}_2\text{O}$)

PERIODICAL: Zhurnal neorganicheskoy khimii, 1959, Vol 4, Nr 7, pp 1667 - 1673 (USSR)

ABSTRACT: The investigation of the system mentioned in the title was carried out for the purpose of identifying the compounds formed. The concentration of uranium was of the order of magnitude of from 10^{-4} to $2 \cdot 10^{-3}$ mol, the content of other components was varied. Because of the bright color of the uranium solution in carbonate and hydrogen peroxide it was possible to investigate the solution equilibria and the composition of the complex ions spectrographically. Figure 1 gives the data for measuring the optical density in the case of a constant ratio between uranium and hydrogen peroxide and different content of potassium carbonate. At least 3 compounds are formed with different

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On Compounds Forming in the System $\text{UO}_2(\text{NO}_3)_2 - \text{K}_2\text{CO}_3 - \text{H}_2\text{O}_2 - \text{H}_2\text{O}$ SOV/78-4-7-36/44

spectrophotometric data. The absorption spectra are represented in figure 2 for the range of 320-500 mμ. Figure 3 gives the values for pH and optical density in dependence on the ratio $\text{CO}_3^{2-} : \text{U}$. The analysis of these data, the titration of H_2O_2 (Figs 4,5), and the cryoscopic investigation (Table 1) lead to the result that the following compounds and complex ions are formed: H_2UO_9 , $[\text{UO}_2(\text{CO}_3)_2(\text{OOH})]^{3-}$, $[\text{UO}_2(\text{CO}_3)_2(\text{OO})]^{4-}$, and an anion that contains two peroxide groups per uranium atom. The light absorption is influenced nearly solely by the compounds uranyl - peroxide group. The dissociation constant for $[\text{UO}_2(\text{CO}_3)_2(\text{OOH})]^{3-} = \text{H}^+ + [\text{UO}_2(\text{CO}_3)_2(\text{OO})]^{4-}$ was estimated at $2.5 \cdot 10^{-11}$. There are 6 figures, 2 tables, and 12 references, 4 of which are Soviet.

SUBMITTED:

March 25, 1958

Card 2/2

21, 3100

22/06
S. 180/00/002/001/006/022
A057/A129

AUTHORS: Gurevich, A.M.; Preobrazhenskaya, L.D.; Komarov, Ye.V.; Icheva, N.P.

TITLE: Spectrophotometrical investigation of the system $\text{UO}_2(\text{NO}_3)_2 - \text{ROH} - \text{H}_2\text{O}_2 - \text{H}_2\text{O}$

PERIODICAL: Radiokhimiya, v. 2, no. 1, 1960, 32 - 43

TEXT: In the present work physico-chemical investigations of the system $\text{UO}_2(\text{NO}_3)_2 - \text{ROH} - \text{H}_2\text{O}_2 - \text{H}_2\text{O}$ were made by means of the spectrophotometric method and potentiometric titrations using $10^{-4} - 10^{-3}$ M uranium solutions. In previous papers [Ref. 1: Tr. Radiyevogo inst. im. V.G. Khlopina AN SSSR (Proceedings of the Radium Institute imeni V.G. Khlopin AS USSR), 8, 110 (1958); Ref. 2: ZhNKh, 3, 2512 (1958); Ref. 3: ibid, Ref. 1, 8, 96 (1958)] results concerning hydrolysis and decomposition of the UO_8^{4-} anion have been presented. This research program is continued by the present investigations into the formations and composition of per-uranium anions in the above-mentioned four-component system. Thereby the reversibility of the process was studied. Due to the complexity of the system, preliminary investigations with solutions not containing H_2O_2 were carried

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A057/A129

Spectrophotometrical investigation of the system....

out, and then the effect of some factors on the composition of the solution in the presence of H_2O_2 was studied. Solutions with a certain content of uranium or H_2O_2 and with increasing ratio ROH/U were prepared by: I - adding quickly alkali to the uranyl nitrate solution containing H_2O_2 ; II - adding simultaneously ROH and H_2O_2 -solutions to uranyl nitrate solutions; III - by slow titration with alkali solution [as described in a previous paper, Ref. 4: ZhNKh, 2, 2307 (1957)]; and IV - adding H_2O_2 to the products of hydrolysis of the uranyl ions formed in the investigated system. The pH measurements were made with a glass electrode and МП-5 (LP-5) potentiometer, while optical density D was determined on a СФ-4 (SF-4) spectrophotometer. Constancy of the pH and D values in time and reproducibility of the results indicated a true or a metastable equilibrium in the solution. The dependence of D on pH in solutions not containing H_2O_2 demonstrates that different products of hydrolysis exist in the solutions containing $5 \cdot 10^{-4}$ M uranium at pH 3 - 14. According to data published by J. Sutton [Ref. 5: J. Chem. Soc. Iss. no. 2, 275 (1949)], and S. Ahrlund et al. [Ref. 6: Acta Chem. Scand., 8, 1907 (1954)] the present authors assume the formation of the cations $U_2O_5^{2+}$, and $U_3O_8^+$ at pH 3 - 7, while at pH 8 - 14 apparently poly-nuclear anions are formed. Weakly acidic and strong alkaline (pH 14) solutions of the products of hydrolysis are stable and obey Lambert-Beer's law. Between pH 10 and 12 with

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Spectrophotometrical investigation of the system....

uranium concentrations of $5 \cdot 10^{-4}$ M the optical density changes steadily with time apparently due to polymerization and formation of difficultly soluble polyuranates. The tabulated experimental results obtained with solutions containing H_2O_2 demonstrate that changes in the sequence of mixing of the components or in the time do not change the optical density at pH 6 - 14. Diagrams showing the dependence of D on pH indicate formation of different compounds. By comparison of their absorption spectra the compounds formed in the investigated system $UO_2(NO_3)_2 - ROH - H_2O_2 - H_2O$ ($R = Na^+, K^+$ or NH^+) can be identified. Under certain conditions the same anions are formed in a system with low uranium concentration and in hydrolysis of $Na_4UO_8 \cdot 9 H_2O$ (Ref. 2). According to former investigations $H_2U_2O_9$ is formed in weak acid solutions, while at pH 14 in dependence on the H_2O content formation of polyperuranate $U_4O_{10}^{6-}$ or of the monomer UO_4^{4-} occurs. In the interval of pH 11 - 12 the composition of the solutions depends essentially on: the sequence of mixing of the compounds, the uranium concentration, the ionic strength and the kind of alkali. Discussing the obtained results the authors conclude that in the investigated system (containing H_2O_2) with 10^{-4} - 10^{-3} M uranium concentration and at pH 2 - 14 stepwise formation of complexes occurs. In weakly acidic and strong alkaline solutions the reactions are completely reversible, while at pH 7 - 13 some irreversibility is observed. The latter

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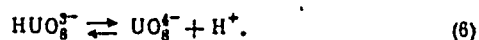
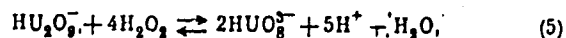
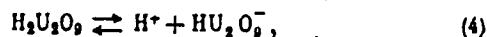
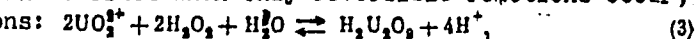
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Spectrophotometrical investigation of the system....

is due to polymerization effects, which increase with increasing uranium concentration and ionic strength. The difference in degree and character of polymerization can be explained by the existence of compounds with different H_2O_2 content at pH 11 - 12 and different spectrophotometric characteristics (HUO_3^{2-} , $HU_2O_3^{2-}$, $HU_4O_{20}^{5-}$ or $U_2O_5^{2-}$) non equilibrated... It was observed that in ammoniacal solutions the reaction $UO_5^{2-} + H_2O_2 \rightleftharpoons HUO_3^{2-} + H^+$ is in equilibrium. Considering the present results, conditions can be fixed when only reversible reactions occur, namely the following reactions:



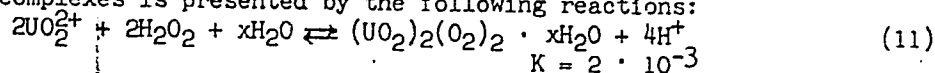
In the present paper it is demonstrated that [contrary to conclusions drawn by G. H. Hüttig and E. Schroeder, Z. Anorg. Chem., 121, 243 (1922)] per-uronic acid is a true peroxide compound. The acid properties of compounds with peroxide bridges between the uranyl ions can be explained by an acid dissociation of an aqua-complex according to reactions $[(UO_2)_2(O_2)_2H_2O] \rightleftharpoons H^+ + [(UO_2)_2(O_2)_2OH]^-$ reported by A.A. Grinberg et al. [Ref. 15: Proceedings of the Radium Institute imeni V.G.

Card 4/8

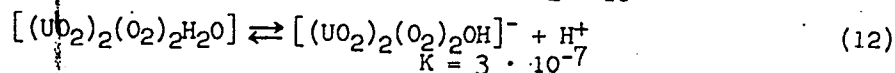
Spectrophotometrical investigation of the system....

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A057/A129

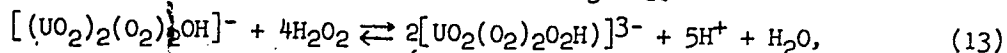
Khlopil AS USSR, 7, 74 (1956)]. In the summary reaction $UO_2^{2+} + 3H_2O_2 \rightleftharpoons UO_4^{4-} + 6H^+$ the source of hydrogen ions is H_2O_2 . Thus the UO_4^{4-} ion can be considered as true peroxide complex anion $[UO_2(O_2)_3]^{4-}$, while the HUO_3^{3-} anion can be represented as complex ion $[UO_2(O_2)_2(O_2H)]^{3-}$ which dissociates $[UO_2(O_2)_2(O_2H)]^{3-} \rightleftharpoons H^+ + [UO_2(O_2)_3]^{4-}$. The concept of uranium peroxide compounds as complex compounds of the uranyl ion with hydrogen peroxide anions agrees with some previous results of the present authors [Ref. 19: Izd. AS SSSR, Otd. khim. nauk, 3, 547 (1959)]. Since the existence of such compounds does not agree with the concept of uranium peroxide compounds admitted in classical investigations of Pizazhevskiy, the present authors assume that these compounds have properties of complexes. A suitable nomenclature is given in Table 4 and the reversible stepwise formation of the complexes is presented by the following reactions:



$$K = 2 \cdot 10^{-3}$$



$$K = 3 \cdot 10^{-7}$$

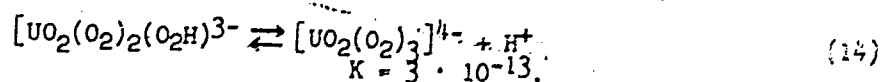


Card 5/8

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Spectrophotometrical investigation of the system....

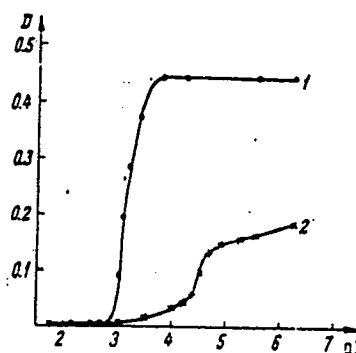
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A057/A129



The mechanism or irreversible formation of poly-nuclear compounds must be investigated in further studies. There are 14 figures, 4 tables and 19 references: 12 Soviet-bloc and 7 non-Soviet-bloc.

SUBMITTED: April 24, 1959

Figure 13: Dependence of D on pH. $C_U = 1 \cdot 10^{-4}$ M;
 $\lambda = 380$ m; $l = 10$ cm. 1 - formation of peracid
 $\text{H}_2\text{U}_2\text{O}_9$; 2 - ion hydrolysis UO_2^{2+} .



Card 6/8

KORDYUM, V.A.; LENOVA, L.I.; VAYSBAND, S.M.; RATUSHNAYA, M.Ya. [Ratushna, M.IA.]; PREOBRAZHENSKAYA, L.N. [Preobrazhens'ka, L.N.]; SMIRNOVA, M.N. [Smyrnova, M.N.]

Effect of the removal of metabolites on the growth of *Chlorella vulgaris*. Mikrobiol. zhur. 27 no.5:23-26 '65.

(MIPA 18:10)

1. Institut mikrobiologii i virusologii AN UkrSSR.

PREOBRAZHenskAYA, L. V.

"The Agrobiological Characteristics and Economic Aspects of Oats Under the Conditions Prevalent in Turukhansk and Their Utilization for the Purpose of Selection." Cand Agr Sci, Leningrad Agricultural Inst, Min Higher Education, Leningrad, 1955. (KL, No 9, Feb 1955)

SO: Sum. No. 631, 26 Aug 55,- Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (14)

BAGDASAR'YAN, S.M., prof.; IVANOV, B.A.; PREOBRAZHENSKAYA, M.M.;
RZHANOVICH, P.K.; SHUK, Ye.I.; SAFONOVA, M.I.; SMIRNOV, Z.,
red.

[Dissertations for the degree of Doctor and Candidate of
Medical Sciences defended from 1951 to 1955] Dissertatsii
na stepen' doktora i kandidata meditsinskikh nauk, za-
shchishchennye v 1951-1955 gg. Pod red. S.M. Bagdasar'iana.
Moskva. Vol. 3. Pt. 1. Bibliografiia. 1962. 303 p.
(MIRA 17:1)

1. Akademiya meditsinskikh nauk SSSR. Moscow. Otdel nauch-
noi meditsinskoy informatsii.

PREOBRAZHENSKAYA, M. N.

Chem

✓ Synthesis of derivatives of 1,2,3-thiadiazolines. A. P. Terent'ev and M. N. Preobrazhenskaya (State Univ., Moscow). *Zhar. Obratket Khim.* 20, 3763-73 (1950); cf. C.A. 45, 6958f. — To 53 g. Me_2CO in 80 ml. (CH_2Cl_2) cooled below 0° was added a suspension of dioxane- SO_2 from 40 g. SO_2 and 64 g. dioxane in 160 ml. (CH_2Cl_2); after standing overnight at room temp. the mixt. neutralized with BaCO_3 in 200 ml. H_2O and the hot soln. filtered and evapd. gave 85.5% Ba acetonesulfonate (I) (from aq. EtOH); with Na_2SO_4 I gave the Na salt (II), sol. in abs. EtOH . I and PhNHNH_2 in aq. AcOH gave 66% phenylhydrazones; the K salt gave a 74% yield, and II gave 70% yield. These phenylhydrazones are sol. in H_2O . I (50 g.) and aq. soln. of 23 g. K_2SO_4 gave a ppt. of BaSO_4 which was sep'd. and the filtrate after concn. was treated with 17 g. $\text{NH}_4\text{OH} \cdot \text{HCl}$, and 17 g. K_2CO_3 , followed by refluxing 0.5 hr.; on cooling there formed 45% esters of K acetonesulfonate; an 84% yield was formed from I and 74% yield from KII salt. Similarly semicarbazide- HCl , KOAc , and I gave 66.6% Ba acetonesulfonate semicarbazone- H_2O (crystals from EtOH). II (0 g.) in hot EtOH was treated with 3 g. AcNHNH_2 yielding in 3 hrs. 66.6% Na acetonesulfonate acetylhydrazones, crystals (from 80% EtOH). K acetonesulfonate and $p\text{-O}_2\text{NC}_6\text{H}_4\text{NHNH}_2$ in 70% EtOH gave K acetonesulfonate $p\text{-nitrophenylhydrazones}$, yellow crystals, sparingly sol. in H_2O . Similarly were prepd.: methyl ethyl ketonesulfonic acid, isolated as the Ba salt dihydrate and K methyl ethyl ketonesul-

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TERENT'EV, A.P. and PROBKAZHENSKAYA

sonate phenylhydrazones, yellow, sol. in H_2O and aq. EtOH. Methyl isobutyl ketone gave Ba methyl isobutyl ketonesulfonate, sol. in H_2O , and the phenylhydrazones of its K salt, colorless solid, sol. in aq. EtOH and H_2O . Similarly was prepd. Ba *p*-tolyl methyl ketonesulfonate (presumably with sulfo group on terminal Me radical), in 83% yield, which gave the phenylhydrazone, 77%, sparingly sol. solid. Adding 40 g. K acetonesulfonate phenylhydrazone (thoroughly dried) to 80 ml. PCl_5 , heating 1 hr. on a steam bath, and mixing with ice gave 63% 2-phenyl-4-methyl-1,2,3-thiadiazoline *S,S*-dioxide (III), m. 85.5-8° (from aq. EtOH); similarly K methyl ethyl ketonesulfonate phenylhydrazone gave 62.4% 2-phenyl-4,5-dimethyl-1,2,3-thiadiazoline *S,S*-dioxide, m. 83-85° (from aq. EtOH). K methyl isobutyl ketonesulfonate phenylhydrazone gave 37% 2-phenyl-4-methyl-5-isopropyl-1,2,3-thiadiazoline *S,S*-dioxide, m. 69.5-70°, and *p*-tolyl methyl ketonesulfonate phenylhydrazone gave 80% 2-phenyl-4-*p*-tolyl-1,2,3-thiadiazoline *S,S*-dioxide, decomp. 165-8° (from EtOH). To 4 g. III and 20 g. KOAc. in 70 ml. MeOH was added at -5° dropwise $p-O_2NC_6H_4N_2Cl$ (from 2.1 g. amlac), giving red $p-O_2NC_6H_4N_2NCH$.

$CMc:N.NPh.SO_2$, m. 130-5° (from petr. ether- Me_2CO). III and $NaNO_2$ in AcOH gave no reaction at room temp. while on heating tar formation took place. Heating I with MeI in MeOH 4 hrs. at 100° gave starting material and a small amt. of products of its decomp. The results with Me_2SO_4 were also neg. It is shown to be effective against acid-fast bacteria *in vitro*. G. M. Kosolapoff

2/2

TERENT'YEV, A.P.; PREOBRAZHENSKAYA, M.N.

Synthesis of derivatives of 1,2,3-thiadiazolines. Zhur.ob.khim.
26 no.12:3468-3475 D '56. (MLRA 10:7)

1. Moskovskiy gosudarstvennyy universitet.
(Thiadiazoline)

20-114 3-30/60

AUTHORS: Terentiyev, A. P., Corresponding Member of the AN USSR,
Preobrazhenskaya, M. N.

TITLE: Synthesis of 5-Methoxyindole Derivatives (Sintez proizvodnykh
5-metoksiindola)

PERIODICAL: Doklady Akademii Nauk SSSR, 1957, Vol. 114, Nr. 3, pp. 560-563 (USSR)

ABSTRACT: The derivatives of 5-oxyindole, which forms the basis of the
serotin structure, are of considerable interest since many of
them are strong metabolites of serotin. This latter compound,
for its part, possesses varied physiological properties. During
the course of this investigation the authors obtained a
number of 2-aryl-5-methoxyindoles by condensation of p-ani-
sidine with substituted o-halogen acetophenones. The greatest
difficulties of the insulation of the reaction products re-
sulting from this process have not been described, but there
are data concerning the production of 2-phenyl-5-methoxyindole
and 2-(p-methoxyphenyl)-5-methoxyindole. The structure of
2-phenyl-5-methoxyindole was demonstrated from the fact that
N-benzoyl-5-methoxyanthranil acid is obtained at its ozonation.

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20-114 3-30/60

Synthesis of 5-Methoxyindole Derivatives

2-(p-methoxyphenyl)-5-methoxyindole was also obtained from the p-methoxyphenyl hydrazone, which is extremely sensitive to light, of the p-methoxyacetophenone. For yields and properties of the compounds obtained see Table 1. The absorption spectra for the production of indoles are similar in the ultra-violet sphere (Table 2 and Figure 1). 3-(p-methoxyphenyl)-5-methoxyindole was obtained by means of cyclization of (p-methoxyphenyl)-amonomethyl-(p-methoxyphenyl)-ketone through zinc chloride. The absorption spectra in the ultra-violet sphere of the initial anisidine ketone for 2-(p-methoxyphenyl)-5-methoxyindole and for 3-(p-methoxyphenyl)-methoxyindole differ widely from each other. Verkade and Janetzky obtained a 39 % yield of 2-phenylindole through the influence of zinc chloride upon phenacylaniline at 180°C. These authors supposed that the originally formed 3-phenylindole is re-grouped under the influence of chlorine zinc and high temperature into 2-phenylindole. The re-grouping of 3-phenylindole into 2-phenylindole was already obtained previously by Fischer and Schmitt. The authors succeeded in demonstrating that under milder conditions (in ethanol) a substituted 3-phenylindole actually originates at the cyclization of anisidine ketone. There follows the experimental part dealing

Card 2/3

Synthesis of 5-Methoxyindole Derivatives

20-114 -3-30/60

with methods of production of the substances discussed. There are 2 figures, 2 tables and 5 references,

ASSOCIATION: Moscow State University imeni M. V. Lomonosov
(Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova)

SUBMITTED: January 28, 1957

Card 3/3

PREOBRAZHENSKAYA, M.N.: ¹²⁰⁰Master Chem Sci (diss) -- "The synthesis of indoles substituted in the benzene nucleus". Moscow, 1958. 10 pp (Moscow State U in M.V. Lomonosov, Chem Faculty), 150 cc (KL, No 1, 1959, 114)

PREOBRAZHENSKAYA, M. N.

UDC/No-121-3-24/47

AUTHORS: Terent'ev, A. I., Corresponding Member, Academy of Sciences,
USSR, Preobrazhenskaya, M. N.

TITLE: Synthesis of 3-Mercapto Indole and 5-Mercapto-1-Methyl Indole
Derivatives (Sintez proizvodykh 3-merkaptotindola i 5-merkaptotindola-1-metilindola)

REFERENCE: Zhurnal khimicheskoy fiziki, 1959, Vol. 29, No. 3, pp. 481-484
(USSR)

ABSTRACT: In connection with the high physiological activity of various
indole compounds containing a hydroxy- (or alkoxyl) group in
the benzene nucleus the synthesis and the investigation of
the derivatives mentioned in the title are very interesting.
Hitherto corresponding substituted indoles have not been
described. It is difficult to produce them according to
Fischer (Fisher), Heyser and others. By new methods of
synthesis worked out by the authors (Ref. 1) several derivatives
mentioned in the title could be produced. Indole or 1-methyl
indole was reduced to a corresponding dihydroindole (indoline).
Indoline can be thiocyanated. The obtained indoline thiocyanate

Card 1/3

S V/80-121-3-64/47

Synthesis of 5-Mercapto Indole and 5-Mercapto-1-Methyl Indole Derivatives

was dehydrated to indole thiocyanate. Thus 5-indoline thio-
cyanate (I), 5-thiocyanate-1-methyl indoline (II), 5-indole
thiocyanate (III) and 5-thiocyanate-1-methyl indole (IV) were
produced. The yield of (IV) computed for initial indole
amounts to 57 % of (IV) - 34 %. The thiocyanogen group enters
position 5 of the indoline cycle (Ref 2). In the case of bromina-
tion of indolines a hydrogen atom is replaced too which is
attached to the fifth carbon atom. In the course of bromination
of 1-methyl indoline 5-bromo-1-methyl indoline was obtained
which was dehydrated to 5-bromo-1-methyl indole. By oxidation
of the latter with chromic acid 5-bromo-1-methyl isatine
was isolated. It agreed with the substance which was synthesized
from isatine. By being boiled with alkalis thiocyanogen com-
pounds form disulfides. By reduction and following benzoyla-
tion (II) 5-benzoyl-mercapto-1-methyl indoline (K) was syn-
thesized. Its dehydration by anil chloride in xylene yielded
in 5-benzoyl-mercapto-1-methyl indole (KI). The work with
these substances demands a lot of precautionary measures
since they cause severe dermatitis the symptoms of which do
not show before 2-3 weeks. There are 1 figure and 2 references,
2 of which are Soviet.

Card 2/3

Synthesis of 5-Mercapto Indole and 5-Mercapto-1-Methyl Indole Derivatives

507/20-121-3-24, 27

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova
(Moscow State University imeni M. V. Lomonosov)

SUBMITTED: March 19, 1958

Card 3,3

Preobrazhenskaya, M. N. 20-2-27/60

AUTHORS: Terent'yev, A. P. Corresponding Member AN USSR, Preobrazhenskaya, M. N.

TITLE: A New Method for the Synthesis of Indoles Substituted in the Benzene Ring (Novyy metod sinteza indolov, zameshchennykh v benzol'nom yadre)

PERIODICAL: Doklady AN SSSR, 1958, Vol. 118, Nr 2, pp. 302 - 305 (USSR)

ABSTRACT: In connection with the discovery of serotonin and with the search for its antimetabolites a number of works on the substances mentioned in the title was published. But their synthesis is very complicated. Three of such methods together with the difficulties occurring in them are cited. The new method suggested here is based on the reduction of indole (or its homologue), which leads to the production of indoline, an aromatic amine. The substituents are then introduced into the benzene nucleus by means of ordinary reactions. The substituted indoline is dehydrated, which leads to the production of a corresponding substituted indole. The authors produced 6-nitro-1-methyl-indole, 6-amino-1-methyl-indole as well as the benzoyl- and phthalyl-derivative of the latter. The methylation of the indole and the production of 1-methyl-indoline I were brought about by a method described in publications (references 1, 2). The latter substance was nitrated under analogous conditions

Card 1/3

A New Method for the Synthesis of Indoles Substituted in the Benzene Ring 20-2-27/60

as dimethyl-toluidine (reference 3) and 6-nitro-1-methyl-indoline II isolated. The latter compound was dehydrated (analogous to reference 4) by boiling in xylene with chloranil. The yield of 6-nitro-methyl-indole III amounted to 61 % relative to indole and 72 % relative to 1-methylindole. By oxidation of substance II with chromic acid they obtained nitro-methyl-isatin IV with a melting point highly different from that of 5-nitro-1-methyl-isatin described in publications (reference 5). Thus the nitro group in the produced nitro-indole has not the position 5. The authors are of the opinion that the substance synthesized by them is 6-nitro-1-methyl-indole (corresponding to reference 7). By reduction of this compound in the presence of nickel of Reney they obtained 6-amino-1-methylindole V with a 49 % yield calculated on indole. 6-amino-1-methyl-indole was also produced in another way: by reduction of 6-nitro-1-methyl-indoline II by means of tin chloride they obtained 6-amino-1-methyl-indoline VI. Heated with phthal-anhydride this substance yielded 6-phthalimino-1-methyl-indoline VII. 6-phthalimino-1-methyl-indole VIII after heating with hydrazine-hydrate yielded 6-amino-1-methyl-indole V. The two benzoyl-derivatives from V, which was produced from 6-nitro-1-methylindole III, and that from 6-phthalimino-1-methylindole VIII were identical. 6-benzoyl-amino-1-methylindole X was also obtained by dehydration of 6-ben-

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20-2-27/60

A New Method for the Synthesis of Indoles Substituted in the Benzene Ring

zoyl-amino-1-methyl-indoline. An experimental part with the usual data is given. There are 8 references, none of which is Slavic.

SUBMITTED: July 26, 1957

AVAILABLE: Library of Congress

Card 3/3

SOV/63-4-2-31/39

5(3)

AUTHORS: Terent'yev, A.P., Preobrazhenskaya, M.N., Ke Pang-lun

TITLE: The Reduction of Nitriles by Hydrazine-Hydrate in the Presence of Renay-Nickel

PERIODICAL: Khimicheskaya nauka i promyshlennost', 1959, Vol 4, Nr 2, pp 281-282 (USSR)

ABSTRACT: Nitriles may be reduced to primary amines by hydrazine-hydrate in the presence of Renay nickel. They are hydrated under increased pressure on the nickel. The reaction should proceed in a medium saturated with ammonia in order to avoid the formation of secondary and tertiary amines. In some cases, e.g. in the reduction of the nitrile of the o-toluyll acid, the reaction is complicated by the interaction of the nitriles with hydrazine.

Card 1/2 There are 9 references, 2 of which are Soviet, 3 American, 2 English and 2 German.

SOV/63-4-2-31/39

The Reduction of Nitriles by Hydrazine-Hydrate in the Presence of Renay-Nickel

ASSOCIATION: Moskovskiy gosudarstvennyy universitet imeni M.V. Lomonosova (Moscow
State University imeni M.V. Lomonosov)

SUBMITTED: September 19, 1958

Card 2/2

PREOBRAZHENSKAYA, M.N.

"Synthesis of indoles with substitutions in the benzene nucleus"
by M.N.Preobrazhenskaia. Med.prom. 13 no.4:63 Ap '59.
(MIRA 12:6)

(INDOLE)

SOV/79-29-1-67/74

AUTHORS: Terent'yev, A. P., Preobrazhenskaya, M. N.

TITLE: Method of Introducing the Substituents Into the Benzene Nucleus of Indole (Metod vvedeniya zamestiteley v benzol'noye yadro indola). II. Synthesis of 5-Bromo-1-methyl Indole and 5-Amino-1-methyl Indole (II. Polucheniye 5-brom-1-metilindola i 5-amino-1-metilindola)

PERIODICAL: Zhurnal obshchey khimii, 1959, Vol 29, Nr 1, pp 317-323 (USSR)

ABSTRACT: The synthesis of the indoles substituted in the benzene nucleus as suggested by the authors is based upon the "temporary elimination" of the most active 2,3-positions of indole from the reaction. Thus it is possible to avoid until the last stage the synthetically unpleasant properties characteristic of indole as far as the reactions are carried out with typical aromatic amines. In this case 1-methyl indole was the initial product which was obtained by methylation of indole with dimethyl sulfate in liquid ammonia (yield 95%) (Ref 15). The reduction of 1-methyl indole led to 1-methyl indoline (I) (80%). By bromination of the sulfate of (I) in glacial acetic acid 5-bromo-1-methyl indoline (II) was obtained. In the case of heating with

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SOV/79-29-1-67/74

Method of Introducing the Substituents Into the Benzene Nucleus of Indole.
II. Synthesis of 5-Bromo-1-methyl Indole and 5-Amino-1-methyl Indole

chloro aniline in xylene the result was 5-bromo-1-methyl indole (III) (27% yield, calculated for indole). For the structural proof of compound (III) an oxidation with chromic acid was carried out under separation of 5-bromo-1-methyl isatin (IV) which was also obtained according to references 16,17. In contrast with dimethyl-o-toluidine, (I) forms a compound with sulfanilic acid in a mineral acid medium, an azo-dye (V) which is difficultly soluble in water, in an alkali medium, however, an easily soluble azo salt (VI). The reduction of (V) or (VI) led to (VII) (Scheme 3). The heating of (VII) with phthalic anhydride yielded (VIII) which led to (IX) by dehydrogenation of chloro aniline. In the case of heating the latter with hydrazine hydrate the result was 5-amino-1-methyl indole (X) in a yield of 17.5%, calculated for indole. There are 19 references, 2 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet (Moscow State University)

SUBMITTED: November 28, 1957
Card 2/2

5(3)

SOV/79-29-8-18/81

AUTHORS:

Terent'yev, A. P., Preobrazhenskaya, M. N., Sotkov, A. S.,
Sorokina, G. M.

TITLE:

Introduction of Substituents Into the Benzene Nucleus of Indole.
IV. Synthesis of Bromo-, Nitro- and Aminoindoles and Indolines
(Ref 22)

PERIODICAL:

Zhurnal obshchey khimii, 1959, Vol 29, Nr 8, pp 2541-2551
(USSR)

ABSTRACT:

In the present paper, the authors used the scheme previously carried out by them regarding the synthesis of indoles substituted in the benzene nucleus (Ref 1) also for the synthesis of 6-nitro- and 6-nitro-methylindole. The initial products were indoline (I) and 2-methylindoline (II). Indole can be converted into indoline (I) by hydrogenation in the autoclave on Reney's nickel catalyst at 100° and 100-150 atm (Ref 2). Compound (II) was obtained according to scheme 2 by reduction of methyl indole with zinc in hydrochloric acid (Ref 3). According to the nitration of compound (II) described in a publication (Ref 4), compound (I) gave, on nitration, compound (III) in quantitative yield, which was converted into (V) by acylation. In the present

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SOV/79-29-8-18/81

Introduction of Substituents Into the Benzene Nucleus of Indole. IV. Synthesis of Bromo-, Nitro- and Aminoindoles and Indolines (Ref 22)

paper, chloroaniline was used for the dehydrogenation of the N-unsubstituted 6-nitroindolines. The dehydrogenation of (III) with chloroaniline in boiling xylene yielded (VI), the dehydrogenation of (IV) gave (VII). On oxidation of the indole (VI), (VIII) was separated; the oxidation of (VII) gave (IX). On nitration of the indolines with the nitrating mixture in concentrated sulfuric acid, the nitro group enters position 6 of the indoline ring, and on nitration of the 1-acetyl indolines with nitric acid, position 5 of the indoline ring. The dehydrogenation of the corresponding nitroindolines gave the following indoles: 6-nitroindole, 6-nitro-2-methylindole, 5-nitroindole, and 5-nitro-2-methylindole. By reduction of the nitroindoles and nitroindolines with hydrazine hydrate, the corresponding amino compounds were formed. There are 22 references, 4 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet (Moscow State University)

SUBMITTED: July 3, 1958

Card 2/2

5(3)

AUTHORS:

SOV/79-29-9-15/76
Terent'yev, A. P., Preobrazhenskaya, M. N., Sorokina, G. M.

TITLE:

Introduction of Substituents Into the Benzene Ring of Indole.
V. Synthesis of the Ketones of the Indole Series (Ref 1).

PERIODICAL:

Zhurnal obshchey khimii, 1959, Vol 29, Nr 9, pp 2875-2881 (USSR)

ABSTRACT:

The present paper describes the synthesis of the indoles acylated in position 5, by dehydrogenation of the respective indolines. The behavior of indolines in the Friedel-Crafts reaction had hitherto scarcely been investigated (Refs 1-6). Initial products were 1-acetyl indoline (IV) and 1-acetyl-2-methyl indoline (V). Both these compounds were caused to react with acetyl chloride or chloroacetyl chloride according to F. Kunckell (Ref 7) in carbon disulphide medium and with $AlCl_3$ as catalyst (Reaction Scheme 1). 1,5-diacyl indolines (VI), (VII), and 1-acetyl-5-chloroacetyl indolines (VIII), (IX) were obtained in high yields. Aside from compound (VIII), the reaction of compound (IV) with chloroacetyl chloride and $AlCl_3$ yields a small amount of a product (X) which is probably an isomer of compound (VIII). The hydrolysis of the obtained 1,5-diacyl indolines with diluted hydrochloric acid yielded

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SOV/79-29-9-15/76

Introduction of Substituents Into the Benzene Ring of Indole. V. Synthesis of the Ketones of the Indole Series (Ref 1)

5-acetyl indoline, 5-chloroacetyl indoline, 5-acetyl-2-methyl indoline, and 5-chloroacetyl-2-methyl indoline (XI-XIV) (yield 80-90%) (Reaction Scheme 2). The following indoles were obtained when boiling the corresponding 5-acyl indolines with chloroaniline in xylene: 5-acetyl indole, 5-chloroacetyl indole, 5-acetyl-2-methyl indole, 5-chloroacetyl-3-methyl indole (XV-XVIII). The Beckmann rearrangement of oxime of 5-acetyl indole yielded 5-acetamino-1-acetyl indoline, thus proving the structure of the ketones of the indole and indoline series obtained. Compounds (XIII, XIV) irritate the skin and excite tears. The infrared absorption spectra of indolines differ from those of the obtained indoles. The spectra of ketones, taken with the spectrophotometer of type SF-4, of the indole series are identical (Figs 1, 2, 3). In the Friedel-Crafts reaction of 1-acetyl indoline with chloroacetyl chloride a mixture is formed of 1-acetyl-5-chloroacetyl indoline and another isomer in the ratio of 9 : 1. Reduction of 5-acetyl indoline or 5-chloroacetyl indoline according to Klemmensen leads to 5-ethyl indoline. There are 3 figures, 3 tables, and 11 references, 3 of which are Soviet.

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SOV/79-29-9-15/76

Introduction of Substituents Into the Benzene Ring of Indole. 7. Synthesis
of the Ketones of the Indole Series (Ref 1)

ASSOCIATION: Moskovskiy gosudarstvennyy universitet
(Moscow State University)

SUBMITTED: July 3, 1958

Card 3/3

ZHEREBCHENKO, P.G.; GOLOVCHINSKAYA, Ye.S.; KOSTYANOVSKIY, R.G.; KRASNYYKH,
I.G.; KUZNETS, Ye.I.; MAGIDSON, O.Yu.; MURASHOVA, V.S.; PASTUKHOVA,
I.S.; PRIMOBRASHENSKAYA, M.N.; SUVOROV, N.N.; TER-VARTANYAN, L.S.;
ZHKHINVADZE, K.A.; SHASHKOV, V.S.; SECHUKINA, M.N.

Role of oxidative deamination in the mechanism of radiation
protection afforded by some amines. Zhur.ob.biol. 21 no.2:
157-160 Mr-Apr '60. (MIRA 13:6)
(RADIATION PROTECTION) (DEAMINATION)

S/079/60/030/04/36/080
B001/B016

AUTHORS: Terent'yev, A. P., Preobrazhenskaya, M. N.

TITLE: Introduction of Substituents Into the Benzene Ring of
Indole. VI. Synthesis of Sulfo Derivatives of Indole and
Indoline (Ref. 1)

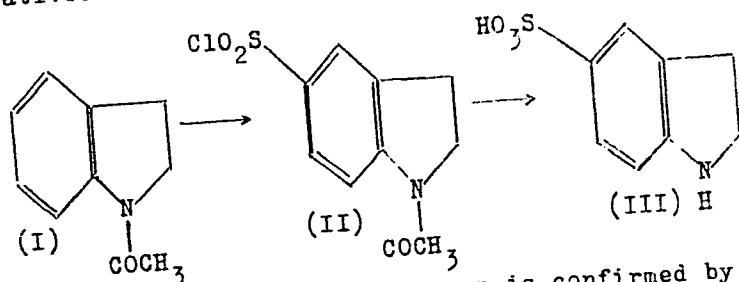
PERIODICAL: Zhurnal obshchey khimii, 1960, Vol. 30, No. 4, pp. 1218-1222

TEXT: In the present paper, the authors synthesized the 5-indole
sulfamides by dehydrogenation of the corresponding 5-indoline sulfamides
obtained from indoline sulfochloride. The sulfochlorination of the
indolines and their nearest analogs (tetrahydro quinolines) has hitherto
not been described. 1-Acetyl-indoline (I) with chloro sulfonic acid was
shown to yield the 1-acetyl-indoline-5-sulfochloride (II) (Ref. 7). On
hydrolysis with hydrochloric acid, the 5-indoline sulfonic acid (III)
is obtained from (II):

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Introduction of Substituents Into the Benzene Ring of Indole. VI. Synthesis of Sulfo Derivatives of Indole and Indoline (Ref. 1)

S/079/60/030/04/36/080
B001/B016



The position of the sulfo group is confirmed by the fact that the acid (III) reacts already in the cold with bromine water, and that in this solution the ion SO_4^{2-} occurs (Refs. 8, 9). By heating the chloride (II) with ammonium carbonate, the amide (IV) resulted. Compound (V) was formed on reaction of (II) with an aqueous dimethyl solution (67.2%) and (VI) by heating (II) with methyl aniline and sodium bicarbonate. By hydrolysis with hydrochloric acid, these 1-acetyl-indoline sulfoamides (IV, V, VI) were converted to the corresponding indoline

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Introduction of Substituents Into the Benzene
Ring of Indole. VI. Synthesis of Sulfo Deriv-
atives of Indole and Indoline (Ref. 1)

S/079/60/030/04/36/080
B001/B016

sulfonamides (VII, VIII, IX). By heating with chloranil in xylene, these sulfonamides were converted to the indole sulfonamides. The yields of these compounds were: amide (X) 13.7%, amide (XI) 18%, amide (XII) 9.8% (Second Scheme). When comparing the behavior of the indolines with that of the o-toluidines in different reactions of electrophilic substitution it may be seen that, irrespective of an apparent analogy, these compounds behave differently in many substitution reactions. Examples are given and explained. There are 18 references, 8 of which are Soviet. ✓

ASSOCIATION: Moskovskiy gosudarstvennyy universitet (Moscow State University)

SUBMITTED: May 11, 1959

Card 3/3

SUVOROV, N.N.; PREOBRAZHenskAYA, M.N.

Synthesis of $N-(\alpha - \beta\text{-tetraacetylglucopyranosyl})\text{-indole}$.

Zhur.ob.khim. 30 no.7:2434-2435 J1 '60. (MIRA 13:7)

1. Vsesoyuznyy nauchno-issledovatel'skiy khimikofarmatsevticheskiy institut imeni S.Ordzhonikidze.
(Indole)

ZHEREBCHENKO, P.G.; SUVOROV, N.N.; MURASHOVA, V.S.; PREOBRAZHenskAYA,
M.N.; SOROKINA, N.S.; FEDOROVA, M.V.

Radioprotective activity of some tryptamine derivatives and
their homologues. Med.rad. 6 no.8:27-32 Ag '61. (MIRA 14:8)
(RADIATION PROTECTION) (INDOLE)

SUVOROV, N.N.; PREOBRAZHENSKAYA, M.N.

Derivatives of indole. Part 12: Synthesis of 1-(D- β -glucopyranosyl)-indole. Zhur.ob.khim. 31 no.9:2839-2845 S '61. (MIRA 14:9)

1. Vsesoyuznyy nauchno-issledovatel'skiy khimiko-farmatsevticheskiy institut imeni S.Otdzhonikidze.

(Indole)

KUZNETS, Ye.I.; SHASHKOV, V.S.; TER-VARTANYAN, L.S.; PREOBRAZHenskAYA, M.N.;
SUvOROV, N.N.; SYCHEVA, T.P.; SHCHUKINA, M.N.

Differences in the action of some monoamine oxidase inhibitors in
vitro and in vivo. Dokl.AN SSSR 136 no.5:1231-1234 P '61.
(MIRA 14:5)

1. Predstavleno akad. A.N.Bakulevym.
(AMINE OXIDASE) (PHARMACOLOGY)

SUVOROV, N.N.; PREOBRAZIENSKAYA, M.N.; UVAROVA, N.V.; SHEYNKER, Yu.N.

Synthesis of benzo-substituted indolyisopropylamines. Izv.AN
SSSR Otd.khim.nauk no.4:729-730 Ap '62. (MIRA 15:4)

1. Vsesoyuznyy nauchno-issledovatel'skiy khimiko-farmatsevticheskiy
institut im. S.Otdzhonikidze i Institut khimii prirodnikh
soyedineniy AN SSSR.

(Amines)

TERENT'YEV, A.P.; Q8 BAN-LUN' [Ko Pang-lun]; PREOBRAZHENSKAYA, M.N.

Role of substituents in the benzene ring of indole. Part 3:
1 Methylindole-5-aldehyde. Zhur.obk'khim. 32 no.4:1335-1336
Ap '62. (MIRA 15:4)

1. Moskovskiy gosudarstvennyy universitet imeni M.V.Lomonosova.
(Indole) (Substitution (Chemistry))

SUVOROV, N.N.; PREOBRAZHenskAYA, M.N.; UVAROVA, N.V.

Derivatives of indole. Part 13: New method of synthesizing
L-methyltryptamine. Zhur.ob.khim. 32 no.5:1567-1572 My '62.
(MIRA 15:5)

1. Vsesoyuznyy nauchno-issledovatel'skiy khimiko-farmatsevticheskiy
institut imeni S.Otdzhonikidze.
(Indole)

PREOBRAZHenskAYA, M.N.; ORLOVA, L.M.; SUVOROV, N.N.

Synthesis of α -hydroxy- β -methyl- β -(3-indolyl) propionic acid.
~~Zhurn. ob. khim.~~ 33 no. 4:1378-1379 Ap '63. (MIRA 16:4)
(Indolepropionic acid) (Alkaloids)

POTAPOV, V.M.; TERENT'YEV, A.P.; PREOBRAZHenskAYA, M.N.; SUVOROV, N.N.

Stereochemical studies. Part 16: Optically active β -(3-indolyl)
isopropylamine. Zhur. ob. khim. 33 no.8:2702-2705 Ag '63.
(MIRA 16:11)

PREOBRAZHenskAYA, M.N.; UVAROVA, N.V.; SHEYNKER, Yu.N.; SUVOROV, N.N.

Syn-anti-isomerism of 3-aryl hydrazones of 6-methyl-2,3-piperidinedione. Dokl. AN SSSR 148 no.5:1088-1090 F '63. (MIRA 16:3)

1. Vsesoyuznyy nauchno-issledovatel'skiy khimiko-farmatsevticheskiy institut im. S.Ordzhonikidze i Institut khimii prirodnikh soyedineniy AN SSSR. Predstavleno akademikom M.M.Shemyakinym.

(Piperidinedione) (Hydrazones) (Isomerism)

PROBRAZHENSKAYA, M.N.; SUVOROV, N.N.

1-Glycosylindoles. Part 3: Action of nucleophilic agents on
 α -2,3,4,6-tetra-O-benzylglucopyranosyl bromide. Zhur. ob.
khim. 35 no.5:888-893 My '65.

Glycosylindoles. Part 4: 1- β -tetrabenzyl glucopyranosyl
indole. Ibid.:893-896 (MIRA 18:6)

1. Vsesoyuznyy nauchno-issledovatel'skiy khimiko-farmatsevticheskiy
institut imeni Ordzhonikidze.

PREOBRAZHENSKAYA, M.N.; ORLOVA, L.M.; SAVEL'YEVA, L. ; KISH, A.V.;
ZARETSKIY, V.I.; VUL'FSON, N.S.; SHVOROV, N.N.

Synthesis and study of racemic indolemycin and isoindolesmycin
acids. Dokl. AN SSSR 166 no.3:611-614 Ja '66.

(MIRA 19:1)

1. Vsesoyuznyy nauchno-issledovatel'skiy khimiko-farmatsevticheskiy
Institut im. S.Ordzhonikidze i Institut khimii prirodnykh soedineniy
AN SSSR. Submitted May 4, 1965.

ZHAROVA, Ye.I.; PROTASOVA, T.G.; KHRUSTALEV, S.A.; PREOBRACHENSKAYA, M.N.;
SUVOROV, N.N.; RAUSHENBAKH, M.O.

Leukemogenic (blastomogenic) properties of some compounds of
the indole series. Report No.2. Probl. gemat. i perel. krovi.
no.6:38-42 '65. (MIRA 18:11)

1. Tsentral'nyy ordena Lenina institut gematologii i perelivaniya
krovi (dir. - dotsent A.Ye.Kiselev) Ministerstva zdravookhraneniya
SSSR, i Vsesoyuznyy nauchno-issledovatel'skiy khimiko-farmatsevti-
cheskiy institut (dir. - prof. M.K.Rubtsov), Moskva.

PREOBRAZHENSKAYA, M.V.

Results obtained in using gamma radiation for observing
the dynamics of moisture in soils of the Pakhta-Aral State
Farm. Pochvovedenie no.10:105-109 0 '59. (MIRA 13:2)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut gidrotekh-
niki i melioratsii.
(Soil moisture) (Gamma rays)

PREOBRAZHENSKAYA, M.V., kand. sel'skokh. nauk

Using the gamma-spectroscopic method for determining soil moisture in irrigation and drainage investigations. Trudy VNIIGiM 38:56-67 '62. (MIRA 16:7)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut gidrotekhniki i melioratsii.

(Gamma-ray spectrometry)
(Soil moisture)

PETROV, Ye.G., kand.sel'skokhoz.nauk; PREOBRAZHENSKAYA, M.V., kand.
sel'skokhoz.nauk

Effect of sprinkler irrigation on the soil water and salt
balance in cotton fields following fall saturation irrigation
under conditions existing on the "Pakhta-Aral" State Farm.
Dokl.Akad.sel'khoz. 24 no.10:43-48 '59. (MIRA 13:2)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut gidrotekhniki
i melioratsii imeni A.N.Kostyakova. Predstavlena chlenom-
korrespondentom Vsesoyuznoy akademii sel'skokhozyaystvennykh
nauk imeni V.I.Lenina A.M.TSarevskim.

(South Kazakhstan Province--Irrigation farming)

Translation from: Referativnyy zhurnal, Geografiya, 1957, Nr 6,
p 68 (USSR) 14-57-6-12150

AUTHORS: Preobrazhenskaya, M. V., Orlova, T. D.

TITLE: Safe Rain Intensity in Central Chernozem Region
(Dopustimaya intensivnost' dozhdya v usloviyakh
Tsentral'no-chernozemnoy oblasti)

PERIODICAL: V sb: Oroscheniye s-kh. kul'tur v Tsentr.-chernozem.
polese RSFSR, Nr 2, Moscow, AN SSSR, 1956, pp 77-82

ABSTRACT: To determine what is a safe intensity of rainfall,
observations were made on the time of formation of
puddles on the ground at various intensities of rain-
fall. It was established that a safe intensity of a
continuous rainfall, with drop diameters ranging from
0.2 mm to 1.0 mm, varied from 0.3 mm/min to 1.2 mm/min.
Crop rotation on a particular field, type of crop
grown there, and agricultural techniques used are the

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Safe Rain Intensity in Central Chernozem Region (Cont.) 14-57-6-12150

main elements which determine what is a safe intensity of rainfall in each instance. For the fields which have been under cultivation for a long time, a safe intensity of rainfall soon after plowing is 0.7 to 0.9 mm/min; for the two-crop fields, it is 0.5 to 0.6 mm/min; for the winter-crop fields, it is 0.3 to 0.4 mm/min. For the fields plowed at some time prior to the rain, a safe intensity is 1.1 to 1.2 mm/min. When calculating a safe intensity of rainfall as part of over all future plans one must consider agricultural techniques to be used, various types of crop rotation and the periods when rainfall occurs in a given area.

Card 2/2

L. A. K.

PREOBRAZHENSKAYA, M.V., kandidat sel'skokhozyaystvennykh nauk.

Depth of water penetration in soil of the central black earth belt irrigated
with various standard volumes of water. Gidr. i mel. 5 no.6:19-25 Je '53.

(MLRA 6:7)

(Irrigation)

PREOBRAZHENSKAYA, M.Ye.

Biological activity of polysaccharides. Vop. med. khim. 10
no.4:339-351 J1-Ag '64. (MIRA 18:4)

1. Institut biologicheskoy i meditsinskoy khimii AMN SSSR,
Moskva.

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TITLE Blood Prothrombokinase and Thrombotropine Deficiency in Splenectomised Rats.
(Nedostatochnost' protrombokinazy krovi i trombotropina u splenektomirovannykh krys. - Russian)

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ABSTRACT The authors showed already previously that a complete splenectomy in animals leads to an abrupt thromboplastic activity of the blood. At the same time a certain loss of solidity of the capillaries is observed. The present investigation is dedicated to the study of the immediate causes of the catastrophic reduction of the mentioned blood activity. This activity depends on the amount and quality of prothrombokinase in the blood platelets (of factor 3 of the blood platelets) and on the level of thrombotropine in the plasma. Therefore, when tests were resumed, chief attention was concentrated on the study of the number of blood platelets and the prothrombokinase "charge" contained in them. The concentration of this latter enzyme in the plasma at different stages of the ex-

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periment, the change of the number of erythrocytes, of the percentage of hemoglobin and prothrombine were also studied. Finally the solidity of the capillaries before and after splenectomy was determined. White rats served as test material. In 262 of them the entire spleen, and in 149 only half of the spleen was removed. 145 normal rats served for control. Results: It is known that in splenectomised rats the greatest reduction in thromboplastic blood activity is observed between the 6th and 9th day after operation, which fact was confirmed by the authors' tests. The half-operated and the normal animals exhibited no essential changes. Only one death occurred here. Toward the 18th and 25th day the mentioned activity was almost restored to the normal physiological level in the majority of the surviving operated animals. Complete splenectomy inevitably caused the death of part of the animals toward the 5th to 8th day. The prothrombine concentration usually remained unchanged, in individual cases however it completely disappeared from the plasma which was a very bad prognostic symptom. Complete splenectomy, in contrast to a partial one, leads to hypothrombotropinemia. On the 21st day the physiological level returns. As is known, thrombotropine-biosynthesis is

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under control of vitamin K. In operated animals which received large doses of 2-methyl -1,4-naphthoquinone and in others which received small doses of synkavit, the thrombotropine concentration was restored after 24 hours. It was found to decrease further by 15 %. In spite of this restoration the former low thromboplastic blood activity was conserved in the rats. This indicates that the noticed decrease in concentration to 40 % is not the only and main cause of the catastrophic decrease in blood activity. Therefore the prothrombokinase of blood platelets as the second agent on which the formation of blood thrombokinase depends was studied. On the 7th to 8th day after the full operation the number of erythrocytes in the blood is considerably reduced: the number of blood platelets rises sharply. It seems that there occurs a certain absolute increase in platelets at this time. The results indicate that the prothrombokinase deficiency (of factor 3 of the blood platelets) occurring in splenectomised

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rats is due to an infection agent (bartonellosis). Thus the insufficiency of blood platelets with regard to factor 3 may be a consequence of infectious toxicoses. This phenomenon can be removed by antiinfectious agents.

(4 Tables, 5 Slavic references)

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AVAILABLE: Library of Congress.

CARD 4/4

FRFERNIKHINskaya, M. Ya.; ANTONOVA, V.M.

Quantitative determination of glucose in the blood. Vop. med.
Khim. 9 no. 3:303-307 1963. (MIR) 17:9

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ROZENFEL'D, Ye.L.; PREOBRAZHenskAYA, M.Ye.

Structure of biologically active yeast glucans. *Biokhimiia* 27
no.2:214-218 Mr-Apr '62. (MIRA 15:8)

1. Institute of Biological and Medical Chemistry, Academy of
Medical Sciences of the U.S.S.R. and Central Institute of
Hematology and Blood Transfusion, Moscow.
(GLUCAN)

ROZENFEL'D, Ye.L.; PREOBRAZHENSKAYA, M.Ye.; KUZNETSOVA, V.M.

Structural characteristics of yeast glucans active in relation
to the properdin system. Dokl. AN SSSR 142 no.1:219-221 Ja '62.
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PREOBRAZHENSKAYA, M.Ye.

Effect of spleen homogenates on the thromboplastic activity of
blood in rats with experimentally induced radiation sickness.

Nauch.dokl.vys.shkoly;biol.nauki no.4:107-110 '58.

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gosudarstvennogo universiteta imeni M.V.Lomonosova.

(SPLEEN) (RADIATION SICKNESS)

L 25025-65

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S/0301/64/010/004/0339/0351

AUTHOR: Preobrazhenskaya, M. Ye.

TITLE: Biological activity of polysaccharides

SOURCE: Voprosy meditsinskoy khimii, v. 10, no. 4, 1964, 339-351

TOPIC TAGS: polysaccharide, pharmacognosy, pharmacology, bacteria, medical experiment

Abstract: This paper discusses the biological activity of various polysaccharides (PS) and polysaccharide complexes, their chemical structure, their physico-chemical properties and the body's reaction to them. Some have a toxic effect, some cause a temperature change, allergic reactions, a change in the action of the reticuloendothelial system, formation of specific antibodies, and other reactions. In the field of medicine the important questions about the activity of PS lie in two areas: 1) their effect on non-specific resistance of the body to infection; and 2) their effect on malignant neoplasms. Several PS of bacterial origin, also agar-agar and mucin, have an effect on non-specific protective mechanisms of the animal. As an example the author cites the rapid development of resistance

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of the mouse to *Salmonella derby* when injected with some bacterial vaccines, the active factor of which is a lipopolysaccharide. The reason for this resistance is thought to be chemo-taxis action on leukocytes; the process, however, is very complicated and inadequately understood. As to the effect of PS and polysaccharide complexes on neoplasms, the author states that, as it is well known, live or killed bacteria in some instances bring about necrosis and resolution of malignant neoplasms. Some 30 forms of gram negative and seven forms of gram positive organisms have been studied, and it was found that only the gram negative strains contain substances able to provide hemorrhagic necrosis in tumors. It was shown that the PS composition of the antigens of the two bacterial forms differs sharply. As an example, a PS extracted from *Klebsiella pneumoniae* by alkali has exerted a therapeutic influence on rats with leukemia and lymphosarcoma. Of preparations obtained from plants, the most active PS in experiments on ascitic cells as well as on solid tumors was *Solidago* sp. Another example of the activity of PS complexes on tumors is one obtained from *Bacterium prodigiosum*. The lipopolysaccharide was the active fraction causing hemorrhagic necrosis in tumors in a minute dose of 0.1 mg. It has been shown that the injection of PS from *Bacterium prodigiosum* slows down the growth of sarcoma 37 in mice and that the repeated injection of large doses of this PS stops its growth.

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entirely. The author discusses other PS which influence growth of animal tumors, such as zyxosan-glukan, laminarin. The necessary condition to the biological activity of PS is their high molecular weight. Although no clear cut connection between the chemical structure of PS and their biological activity has been demonstrated, the opinion prevails that their high molecular weight is the decisive factor. In summarizing the findings of various experiments by several authors, the writer concludes that the mechanism of PS activity on tumors is far from being clear, and that further study is required to establish the suggestive relationship between the chemical structure, physico-chemical properties of PS, and the body's reaction to them. Orig. art. has 2 graphs and 3 tables.

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NO REF SOV: 016

OTHER: 101

JPRS

Card 3/3

KUZNETSOVA, A., inzh.; PREOBRAZHENSKAYA, N., inzh.; EL'KIN, I.

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(for El'kin).

(Display of merchandise) (Cold storage)

PREOBRAZHenskAYA, N.

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Biul.nauch.inform.: trud i zar.plata 3 no.3:7-14 '60.

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SSSR (for Barkan, Tikunov, Shekhter, Preobrazhenskaya). 3. Vse-
soyuznyy nauchno-issledovatel'skiy institut gidrotekhnicheskikh i
sanitarno-tekhnicheskikh rabot (VNIIGS) (for Savinov, Luskina).
4. Fundamentproyekt (for Grebennik, Merzlyak). 5. Vsesoyuznyy
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mashinostroyeniya (VNIISTroydormash) (for TSaplin). 6. Gidroproy-
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(Vibrators) (Piling (Civil engineering))

SAVKIN, P.S.; KUCHENSKAYA, P.H.

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